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MEMORANDUM FOR RECORD

SUBJECT: Main points and conclusions of telephone conference held on 29 April 1997, dealing with the feasibility of developing an anthrax strain resistant to the current licensed vaccine.

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1. Discussion was held concerning the nature of immunity induced by the current licensed human anthrax vaccine. While much remains unknown of the mechanism of vaccine induced immunity, there is a consensus that it is based on the protective antigen (PA) component of the vaccine. One of the predominant mechanisms likely relates to the ability of antibodies to neutralize the toxin activity by interfering with binding of PA to host cell receptors and with binding of lethal factor (LF) and edema factor (EF) to PA. There are other postulated mechanisms of protection induced by the vaccine but definitive knowledge of this is presently lacking.

2. Various approaches to subvert the vaccine induced immunity were discussed focusing on modification or substitution of the functional PA domains using both in vitro and in vivo selection procedures.

3. The conclusions of the meeting were:

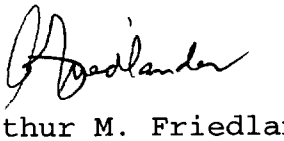
a. Developing a vaccine resistant strain is conceptually feasible, but might be quite difficult in practice, depending on various suppositions on how novel strains would respond to selection in immunized animals. It could require a major research effort.

b. The consensus of the group was that such a major research program would require a minimum of five years to complete in a reliable, fieldable fashion.

c. The institution of a policy to vaccinate against anthrax might be expected to serve as an impetus for the development of such a research effort by a potential adversary.

d. Additional research would be necessary to develop effective immunological countermeasures against a vaccine resistant strain of anthrax. This would be a high priority for medical intelligence.

e. Besides anthrax, there are of course many other options for biological weapons, but it stands as an agent of choice for attack on unimmunized personnel.



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